

**REMARKS**

This is a full and timely response to the outstanding final Office Action mailed October 10, 2001. Prior to entry of this response, claims 12-19 remained pending in the present application. Through this response, claims 18 and 19 have been cancelled without prejudice, waiver, or disclaimer, leaving claims 12-17 remaining in the case. Of these, claims 12 and 16 have been directly amended with this response. It is believed that the foregoing amendments present no new matter to the instant application. Each objection and rejection presented in the Office Action is discussed in the remarks that follow. The Applicant respectfully requests that the amendment being filed herewith be entered and that there be reconsideration of the claims.

**A. Drawings Objections**

The drawings have been objected to under 37 C.F.R. 1.83(a) for not showing every feature of the invention specified in the claims. Specifically, the drawings are objected to for not showing “‘a peripheral surface extending between and joining the palm surface and the base,’ ‘the distal end of the body’ and ‘electrical circuit’ recited in claim 12, ‘a scroll wheel’ recited in claim 16, ‘a transparent shade for transmitting radio frequency energy’ recited in claim 18, and ‘a transparent shade for transmitting infrared energy’ recited in claim 19.”

In response to this objection, the drawings have been amended to show a “scroll wheel.” A marked-up copy of the originally filed drawings is included with the present response which shows these changes in red ink. The remaining objections have been remedied by way of amendments to the claims. It is asserted that no new matter has been added. Formal drawings will be submitted upon receipt of the Notice of Allowability, should such notice issue.

**B. Specification Amendments**

Various amendments have been made to the specification through this response to provide antecedent basis for all terms in the claims, and to provide a correct and accurate description of Applicant's invention as originally disclosed. Although these amendments effect several changes to the specification, it is respectfully asserted that no new matter has been added.

**C. Claim Objections**

Claim 16 has been objected to because of the following informality, "line 1, '4' should be changed to --15-- since claim 4 was cancelled and claim 15 is the only claim reciting a number of keys." Claim 16 has been amended as suggested.

**D. Claim Rejections - 35 U.S.C. §112, First Paragraph**

Claims 12-19 have been rejected under 35 U.S.C. §112, first paragraph, for the objections cited in the Office Action against the specification. First the claimed limitation of "a peripheral surface" has been cancelled from the claims. Second, the claimed limitation of "an edge" has been cancelled from the claims. Third, the claimed limitation of a "distal end of the body" has been amended to a "forward portion," support for which is found in the specification on page 12, lines 21-22 and page 13, lines 14-16. Finally, the claimed limitation of "at least one key..." has been amended to read "at least one key mounted at the forward portion of the body, the key having a portion that defines part of the frontal curvature of said body," support for which is found in the specification on page 13, lines 13-18.

In that these objections are believed to have been overcome, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. §112, first paragraph, be withdrawn.

**E. Claim Rejections - 35 U.S.C. §102(b)**

Claims 12 and 13 have been rejected under 35 U.S.C. §102(b) as being anticipated by *Bidiville et al.* (U.S. Pat. No. 5,578,817), hereinafter *Bidiville*.

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of *each element* of the claim under consideration." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983)(emphasis added). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

With regard to rejected independent claim 12, Applicant respectfully traverses the Office Action position that *Bidiville* discloses the same structure claimed. In particular, Applicant respectfully asserts that *Bidiville* does not disclose, teach, or suggest "at least one key mounted in the forward portion of the body, the key having a fingertip portion that defines a part of the frontal curvature of said body," as now claimed in claim 12. Moreover, the Office Action does not even assert that *Bidiville* discloses a key with a "portion that defines part of the frontal curvature," that is distinct from the palm surface. Rather, the Office Action provides only that *Bidiville* discloses "three buttons (2020A, 2020B, and 2020C) at the distal end of the body."

As claimed, the structure of the keys allow the cursor control device of the present invention to be used in a hand held fashion in addition to on a support surface, as is the norm. "[T]he body 11 may alternatively or additionally be held by slight pressure from the tips of the user's first two fingers which are oriented to naturally occupy the frontal curvature of the body 11.... The user may easily and conveniently activate the keys 12 and 14 as required through the natural inward flexing motion of the fingers or fingertips, without the unnatural downward motion typically demanded of existing prior art devices." Page 15, lines 5-12. *Bidiville* clearly discloses buttons

that require the “unnatural downward motion” discussed in the application. Figures 20A-C of *Bidiville* show buttons 2020A-C to have fingertip portions located on their top, or palm surface. It is therefore inherent that the keys are activated by downward pressure on the fingertip portions. This directly contradicts the present invention.

Furthermore, not only does *Bidiville* not disclose the above noted element, at no point does it disclose, teach, or even suggest the element of a “cursor control device for...hand-held use,” as claimed. Applicant has amended claim 12 to further clarify that “hand-held use” constitutes “operating said device in a mode off of a work surface.” Applicant contends that no new matter has been added to the claim in that the limitation of “hand-held use” was already disclosed in the claim. Moreover, FIGS. 2 and 4, and their accompanying text make clear that hand-held use constitutes use without the device being supported by a work surface. As noted above, the mere fact *Bidiville* discloses a structure requiring downward force on the keys makes clear that there was no intent that the device of *Bidiville* be used in any other manner than on a support surface.

Due to these clear shortcomings of the *Bidiville* reference, Applicant respectfully asserts that *Bidiville* does not anticipate independent claim 12. Therefore, Applicant respectfully requests that the rejection of claim 12 under 35 U.S.C. §102 (b) be withdrawn. In addition, in that claim 13 depends from claim 12, and therefore includes all limitations contained therein, Applicant respectfully requests the rejection of claim 13 also be withdrawn.

**F. Claim Rejections - 35 U.S.C. §103(a)****Rejection of Claims 14 and 15**

Claims 14 and 15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Bidiville*.

As acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office ("USPTO") has the burden under section 103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See In re Fine, 837, F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Accordingly, to make a *prima facie* case for obviousness, there must be some prior art teaching or established knowledge that would suggest to a person having ordinary skill in the pertinent art to fill the voids apparent in the applied reference. It is respectfully asserted that no such *prima facie* case has been made in the outstanding Office Action.

Dependent claims 14 and 15 depend from independent claim 12, and therefore include all limitations contained therein. As noted above, Applicant contends that *Bidiville* does not disclose, teach, or suggest the element of "at least one key mounted at the forward portion of the body, the key having a fingertip portion that defines part of the frontal curvature of said body." Further, the Office Action has not alleged that this element would be obvious to one of ordinary skill in the art. Therefore, a *prima facie* case for obviousness has not been made against Applicant's dependent claims 14 and 15.

It is Applicant's position that a *prima facie* case for obviousness has not been made against Applicant's dependent claims 14 and 15. Therefore, it is respectfully submitted that each of these claims is patentable over *Bidiville* and the remainder of the prior art of record.

### Rejection of Claim 16

Claim 16 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bidiville* in view of *Adams et al.* (U.S. Pat. No. 6,031,518), hereinafter *Adams*.

Dependent claim 16 depends from claim 15, which in turn depends from independent claim 12, and therefore includes all limitations contained in those claims. As noted previously, Applicant contends that *Bidiville* does not disclose, teach, or suggest the element of "at least one key mounted at the forward portion of the body, the key having a portion that defines part of the frontal curvature of said body." The Office Action does not allege that *Adams* discloses the noted element. Moreover, Applicant contends that *Adams* neither discloses, teaches or suggests this element. Therefore, a *prima facie* case of obviousness has not been made against Applicant's dependent claim 16.

### Rejection of Claims 17-19

Claims 17-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Bidiville* in view of *Harding et al.* (U.S. Pat. No. 6,148,869), hereinafter *Harding*.

First, Applicant notes that dependent claims 18 and 19 have been cancelled hereinabove. Dependent claim 17 depends from independent claim 12, and therefore includes all limitations contained therein. As noted previously, Applicant contends that *Bidiville* does not disclose, teach, or suggest the element of "at least one key mounted at the forward portion of the body, the key having a portion that defines part of the frontal curvature of said body." The Office Action does not allege that *Harding* discloses the noted element. Moreover, Applicant contends that *Harding* neither discloses, teaches or suggests this element. Therefore, a *prima facie* case of obviousness has not been made against Applicant's dependent claim 17.

**Rejection of Claims 12-15 and 17-19**

Claims 12-15 and 17-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Koh et al.* (U.S. Pat. No. 5,122,654), hereinafter *Koh*, in view of *Harding*.

With regard to rejected independent claim 12, Applicant respectfully traverses the Office Action position that *Koh* discloses the same structure as claimed with the exception of the roller ball positioning. In particular, Applicant respectfully asserts that *Koh* does not disclose, teach, or suggest "at least one key mounted at the forward portion of the body, the key having a portion that defines part of the frontal curvature of said body," as now claimed in claim 12. Moreover, the Office Action does not even assert that *Koh* discloses a key with a "portion that defines a part of the frontal curvature," that is distinct from the palm surface. Rather, the Office Action provides only that *Koh* discloses "three buttons (50A, 50B, 50C) at the distal end of the body, as the claimed keys."

As discussed above, the structure of the keys allow the cursor control device of the present invention to be used in a hand-held fashion in addition to on a support surface, as is the norm. "[T]he body 11 may alternatively or additionally be held by slight pressure from the tips of the user's first two fingers which are oriented to naturally occupy the frontal curvature of the body 11.... The user may easily and conveniently activate the keys 12 and 14 as required through the natural inward flexing motion of the fingers or fingertips, without the unnatural downward motion typically demanded of existing prior art devices." Page 15, lines 5-12. *Koh* clearly discloses buttons that require the "unnatural downward motion" discussed in the application. Figure 1 of *Koh* show buttons 50A-C to have fingertip portions located on their top surface. It is therefore inherent that the keys are activated by downward pressure on the fingertip portions. This directly contradicts the present invention.

Furthermore, not only does *Koh* not disclose the above noted element, at no point does it disclose, teach, or even suggest the element of a "cursor control device for...hand-held use," as claimed. Applicant has amended claim 12 to further clarify that "hand-held use" constitutes "operating said device in a mode off of a work surface." Applicant contends that no new matter has been added to the claim in that the limitation of "hand-held use" was already disclosed in the claim. Moreover, FIGS. 2 and 4, and their accompanying text make clear that hand-held use constitutes use without the device being supported by a work surface. As noted above, the mere fact *Koh* discloses a structure requiring downward force on the keys makes clear that there was no intent that the device of *Koh* be used in any other manner than on a support surface.

Furthermore, Applicant contends *Harding* does not remedy these deficiencies.

In summary, it is Applicant's position that a *prima facie* case for obviousness has not been made against Applicant's independent claim 12. Therefore, it is respectfully submitted that claim 12 is patentable. In that claims 13-15 and 17 depend from claim 12, and therefore incorporate all the limitations contained therein, it is respectfully submitted that each of claims 13-15 and 17 is patentable over the prior art. As previously noted, claims 18 and 19 have been cancelled.

#### **Rejection of Claim 16**

Claim 16 has been rejected under 35 U.S.C. §103(a) as being unpatentable over *Koh* in view of *Harding* and further in view of *Adams*.



Dependent claim 16 depends from claim 15, which in turn depends from independent claim 12, and therefore includes all limitations contained in those claims. As noted previously, Applicant contends that *Bidiville* does not disclose, teach, or suggest the element of "at least one key mounted at the forward portion of the body, the key having a portion that defines part of the frontal curvature of said body." The Office Action does not allege that *Adams* discloses the noted element. Moreover, Applicant contends that *Adams* neither discloses, teaches or suggests this element. Therefore, a *prima facie* case of obviousness has not been made against Applicant's dependent claim 16.

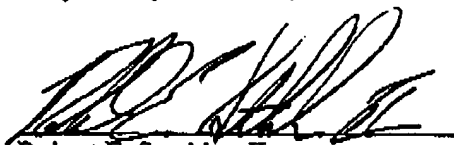
**G. Cancelled Claims**

As identified above, claims 18 and 19 have been cancelled from the application through this response without prejudice, waiver, or disclaimer. Applicant reserves the right to present these cancelled claims, or variants thereof, in continuing applications to be filed subsequently.

**CONCLUSION**

In summary, it is respectfully submitted that claims 12-17 embody a distinct advance in the art not rendered obvious by the cited art of record. Accordingly, an early Notice of Allowability would be appreciated and is therefore respectfully solicited. Should the Examiner have any questions regarding this response, the Examiner is invited to telephone the undersigned attorney.

Respectfully submitted,



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**ANNOTATED VERSION OF MODIFIED SPECIFICATION  
TO SHOW CHANGES MADE**

In accordance with 37 C.F.R. §1.121, please find below the amended specification in which the inserted language is underlined ("\_\_\_") and the deleted language is enclosed in brackets ("[ ]"):

Paragraph beginning on page 12, line 21, through page 13, line 12.

Referring still to Figure 1, the device 10 of the present invention further consists of a ball 16 disposed upon the upper left forward portion 13 of the body 11, part of which protrudes above the body 11 through a circular opening 20 with the remaining portion inside the body 11 and thus not shown. In addition to the ball 16 protruding through the top of the body 11, the ball 16 is slightly exposed on the left side of the body 11 through the same circular opening 20. The ball 16 is preferably made of a smooth, hard plastic, as is known in the art. As noted above, the mirror image of this description is also claimed as my invention as an embodiment of the device 10 for use by the left hand, as shown in Figures 3 and 4. Preferably the ball 16 is as large as possible to give the user accurate control over the cursor during both work surface and hand-held use. However, the ball 16 size is limited so that it can be easily and comfortably manipulated by the user's thumb. The ball 16 is further limited so as to avoid adding too much weight to the device 10 or necessitating a larger body which would not comfortably fit in the user's hand. The shape of the body 11 and disposition of the ball 16 is such that during both work surface and hand-held use the user's thumb can be easily moved between a resting position on the body 11 and placement on the ball 16.

Paragraph beginning on page 13, line 13, through page 14, line 2.

The body 11 further consists of an enter key 12 and a drag key 14 both disposed on the forward portion 13 [top] of the body 11. More specifically, again referring to Figure 1, the enter key 12 is mounted on the top and forward [frontal] portion 13 of the body 11 and the drag key 14 is mounted on the top and right forward [front] portion 13 of the body 11, to the contiguous right of the enter key 12. The keys 12 and 14 extend from the forward portion 13 of the top of the body 11 and angle downward along the body's 11 frontal curvature 24 to occupy the upper portion of the forward side of the body 11. The width of each key 12 and 14 is slightly greater than the width of the average person's finger such that when the user's finger rests on one of the keys 12 and 14 the entire width of the finger is accommodated. The keys 12 and 14 take the same contour as the body 11 and are at all points flush with the body 11. The keys are preferably made of the same injected molded plastic as the remainder of the body 11. The disposition of the keys 12 and 14 orient the hand in relation to the body 11 such that the thumb is in the most optimum place to control the ball 16 and the ulnar fingers rest near or against the side of the body 11 which is opposite the ball 16.

Paragraph beginning on page 17, line 21, through page 18, line 6.

Another alternative embodiment has the body 11 further comprising a scroll wheel 17 (FIG. 1) [(not shown)] as known in the art disposed between the enter key 12 and drag key 14. Scroll wheels permit the up and down scrolling of windows on the computer screen without requiring the "pointing and clicking" technique typically required in a graphical environment. The scroll wheel 17 consists of a spring-loaded supplementary control in the body 11 for generating additional transmissions to the computer which specifically control the scrolling rate and direction. Again, because the electrical and computer interface functions of the device 10 of the present invention are not claimed, they are described only briefly herein, merely for the purpose of making a full disclosure.

**ANNOTATED VERSION OF MODIFIED CLAIMS TO SHOW CHANGES MADE**

In accordance with 37 C.F.R. §1.121, please find below the amended claims in which the inserted language is underlined ("\_\_\_") and the deleted language is enclosed in brackets ("[ ]"):

12. (Twice Amended) A cursor control device for ergonomic work surface and hand-held use, comprising:

a body including:

a convex palm surface configured to fit a palm of a hand that grips the device  
when operating said device in a mode off of a work surface;

a substantially planar base positioned opposite the palm surface;

[a peripheral surface extending between and joining the palm surface and the  
base;

an edge located where the palm surface meets the peripheral surface;]

a roller ball rotatably mounted in the body, the ball being positioned [along the  
edge at] toward the [distal end] forward portion of the body, and protruding above [the palm  
surface] said body for actuation by a thumb of a user;

at least one key mounted at the [distal end] forward portion of the body, the key  
having a [fingertip] portion that defines part of the frontal curvature of said body [peripheral  
surface and a palm portion that forms part of the palm surface]; and

[at least one electrical circuit inside said body connected to said key and said ball; and]

a communicator between said [electrical circuit] device and a computer.

16. (Twice Amended) The device of claim [4] 15 further comprising a scroll wheel  
disposed between the keys.

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